

ILLINOIS CONVULVULACEAE IN THE MISSOURI BOTANICAL GARDEN HERBARIUM

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In an earlier paper on the Illinois Solanaceae in the herbarium of the Missouri Botanical Garden, Mohlenbrock (1982) showed that the collections were not only important historically but they included some previously unreported records. Similar results have been obtained when Illinois collections of the Convolvulaceae have been examined in conjunction with the author's study for *The Illustrated Flora of Illinois*. The collections of Convolvulaceae are particularly enhanced by the George Engelmann specimens of *Cuscuta*, made in conjunction with Engelmann's monographic treatment of that genus in 1842 and 1859.

In this paper, all specimens of Convolvulaceae from Illinois in the herbarium of the Missouri Botanical Garden are cited, along with critical notes on some of the specimens. Nomenclature for the taxa essentially follows Mohlenbrock (1975). Brief biographical sketches of some of the early collectors are given in Mohlenbrock, 1982.

CALYSTEGIA R. Br.

Although the taxa of *Calystegia* listed below are sometimes included in the genus *Convolvulus*, I am recognizing them in the segregate genus *Calystegia*, following the evidence presented by Brummitt (1965) and Lewis & Oliver (1965). *Calystegia* differs from *Convolvulus* by the surface configurations of the pollen grains, by the unilocular ovary, and by a pair of broad bracteoles immediately below the sepals.

In my *Guide to the Vascular Flora of Illinois* (1975), I recognized *Calystegia pubescens*, *C. spithamea*, and three varieties of *C. sepium*. Among the latter is var. *fraterniflora*. After studying the material in the Missouri Botanical Garden herbarium, I have been convinced to follow Brummitt (1980), who has described two additional subspecies of *C. sepium* and who has transferred var. *fraterniflora* to a subspecies of *C. silvatica*. The holotype of Brummitt's *C. sepium* ssp. *erratica* is a Robert Ridgway collection from Richland County, Illinois, deposited in MO.

Calystegia sepium (L.) R. Br., the common bindweed in Illinois, is comprised of four subspecies, two of which have been recently described by Brummitt (1980). Since Brummitt's two new North American subspecies have not been "keyed out" or described in floristic literature of this continent, a key to the four subspecies in Illinois and a description of the two most recently described subspecies are given below.

KEY TO THE SUBSPECIES OF *CALYSTEGIA SEPIUM* IN ILLINOIS

- 1a. Bracteoles not clearly distinct from the sepals, forming a continuous spiral with the sepals and gradually merging with them; sinus of leaves strongly occluded. ---- *C. sepium* ssp. *erratica*

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- 1b. Bracteoles clearly differentiated from the sepals, never merging with them; sinus of leaves open or rarely only slightly occluded.
- 2a. Plants glabrous or sparsely pubescent; leaves mostly hastate.
- 3a. Leaves with V-shaped sinus; corolla pink. ----- *C. sepium* ssp. *americana*
- 3b. Leaves with U-shaped sinus; corolla white (rarely suffused with pale rose). -----
----- *C. sepium* ssp. *angulata*
- 2b. Plants densely soft-pubescent; leaves sagittate. ----- *C. sepium* ssp. *repens*

***Calystegia sepium* (L.) R. Br. ssp. *erratica* Brummitt, Kew Bull. 35(2):330. 1980.**

Plants glabrous or often pubescent; lobes of leaves truncate, scarcely spreading; sinus of leaves strongly occluded; bracteoles not clearly distinct from the sepals but forming a continuous spiral with the sepals and gradually merging with them; bracteoles green, acute to subobtuse, carinate, 1.6–2.6 cm long, 1.0–2.4 cm broad; corolla rose, 4.3–6.0 cm long; stamens 2.5–3.0 cm long.

The holotype designated by Brummitt (1980) for ssp. *erratica* is *R. Ridgway* 2397 from Richland County, Illinois, and deposited in the herbarium of the Missouri Botanical Garden. The type was collected about ten miles northeast of Olney on May 25, 1925 (Fig. 1).

Other states and provinces cited by Brummitt for ssp. *erratica* are Indiana, Michigan, Pennsylvania, New Jersey, New York, and Ontario. An adventive specimen from Oregon is also cited. Two other specimens of ssp. *erratica* are in MO, one being from Michigan and one from Pennsylvania.

Subspecies *erratica* differs from all other subspecies of *C. sepium* by its bracteoles, which form a continuous spiral and merge imperceptibly into the sepals so that each flower appears to be subtended by 3–4 bracteoles, rather than two.

***Calystegia sepium* (L.) R. Br. ssp. *americana* (Sims) Brummitt, Ann. Missouri Bot. Gard. 52:216. 1965.**

Convolvulus sepium L. var. *americanus* Sims, Bot. Mag. 19:pl. 732. 1804.

Convolvulus americanus (Sims) Greene, Pittonia 3:328. 1898.

Calystegia sepium (L.) R. Br. var. *americana* (Sims) Kitagawa, Rep. Inst. Sci. Res. Manchoukuo 3 App. 1:365. 1939.

Convolvulus sepium L. var. *communis* Tryon, Rhodora 41:419. 1939.

Subspecies *americana* is distinguished from ssp. *angulata* by the V-shaped sinus between the basal lobes of the leaf and by its usually pink flowers. The two subspecies show some intergradation, although most specimens can be assigned readily to one subspecies or the other.

The following Illinois collections of *C. sepium* ssp. *americana* are in MO:

ALEXANDER: *J. S. Huston* 392. COOK: *J. M. Greenman* 1874, 1920; *Jensen s.n.*; *H. H. Smith* 5972; *B. Venrick* 3.

***Calystegia sepium* (L.) R. Br. ssp. *angulata* Brummitt, Kew Bull. 35(2):328. 1980.**

Plants glabrous; lobes of leaves triangular, spreading; sinus of the leaves U-shaped; bracteoles green, conspicuously carinate, acute, 1.2–3.2 cm long, 0.6–1.8 cm broad; corolla white or rarely tinged with pale rose, 2.8–6.4 cm long; stamens 1.9–3.1 cm long.

Until Brummitt described this subspecies, it was hidden within ssp. *americana*. It is more of a western subspecies, with Brummitt (1980) giving its range



NO. 2397-----

Plants of the Lower Wabash Valley

Convolvulus sepium L.

About 10 miles n.e. of Olney

RICHLAND COUNTY, ILLINOIS.

Robert Ridgway.

----- May 25, 1925. -----

FIG. 1. (above). Holotype of *Calystegia sepium* (L.) R. Br. ssp. *erratica* Brummitt, from Richland County, Illinois. (below) Label from holotype of *C. sepium* ssp. *erratica*.

to include the northern Pacific states and British Columbia through the Rocky Mountains to the Great Plains and Prairies, then sparingly eastward to New England and eastern Canada. The type is from Idaho.

Two collections of *ssp. angulata* from Illinois are in MO:

COOK: *J. M. Greenman 1961* (Fig. 2). WOODFORD: *G. N. Jones 14316*. The corolla of the Woodford County specimen is pink-tinged.

In addition to the two Illinois specimens of *ssp. angulata* in Illinois, there are specimens in MO from Colorado, Iowa, Kansas, Missouri, Nebraska, New Mexico, New York, Ohio, Pennsylvania, South Dakota, Washington, Wisconsin, Wyoming, the District of Columbia, British Columbia, and Saskatchewan.

***Calystegia silvatica* (Kit.) Griseb. *ssp. fraterniflorus* (Mack. & Bush) Brummitt, Kew Bull. 35(2):332. 1980.**

Convolvulus sepium L. var. *fraterniflorus* Mack. & Bush, Man. Fl. Jackson Co., Mo. 153. 1902.

Convolvulus fraterniflorus (Mack. & Bush) Mack. & Bush, Annual Rep. Missouri Bot. Gard. 16:104. 1905.

Calystegia fraterniflora (Mack. & Bush) Brummitt, Ann. Missouri Bot. Gard. 52:216. 1965.

Calystegia sepium (L.) R. Br. var. *fraterniflora* (Mack. & Bush) Shinnars, Sida 3:282. 1968.

This taxon usually has been considered either a distinct species or a variety of *Calystegia sepium*, differing primarily by its peduncles, or most of them, shorter than its petioles. Brummitt (1980) now indicates that because of its saccate, overlapping, obtuse bracteoles, it is more nearly related to *Calystegia silvatica*, rather than *C. sepium*, calling it *C. silvatica ssp. fraterniflora*.

The following specimens are in MO:

JACKSON: *J. McCree 819*. HANCOCK: *S. B. Mead s.n.*, in 1842. ST. CLAIR: *J. O. Neill 15273*. WABASH: *R. Ridgway 2234, 2432*.

Calystegia spithamaea* (L.) Pursh. JO DAVIESS: *G. N. Jones 15803*. PEORIA: *V. H. Chase 3909*; *J. R. Churchill s.n.

CONVOLVULUS L.

As a result of this study, a second species of *Convolvulus* has been found from Illinois that apparently has been undetected for nearly a century. *Convolvulus incanus* can now be added to the common and widespread *C. arvensis* in the Illinois flora. Since *C. incanus* occurs primarily in the southwestern United States and is not described in midwestern floras, a description of this species is presented below.

***Convolvulus incanus* Vahl, Sym. Bot. 3:23. 1794.**

Trailing perennial; stems cinereous-pubescent, branched from the base; leaves oblong to elliptic, more or less rounded at the tip, tapering to a short petiole, cinereous-pubescent, up to 2.5 cm long; flowers 1–several from the axils of the leaves; sepals 5, more or less free, green, up to 8 mm long; corolla white, up to 1.2 cm across, with 5 acute lobes; capsule ovoid, up to 5 mm long, splitting at maturity into several valves.

ST. CLAIR: Along railroad north of East St. Louis, *N. M. Glatfelter (?) s.n.*—Fig. 3.



PLANTS OF ILLINOIS.
HERBARIUM OF J. M. GREENMAN.
No. 1961
Convolvulus sepium, L.
Along the Rock Island R. R.
near 91st Street, Chicago
Collected by *MS* 28 July 1907

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FIG. 2. (above) Herbarium specimen of *Calystegia sepium* (L.) R. Br. ssp. *angulata* Brummitt, from Cook County, Illinois. (below) Label from specimen of *C. sepium* ssp. *angulata* from Illinois.

Although no collector's name appears on the label of this specimen, the printed label indicates the specimen was in the herbarium of N. M. Glatfelter (and presumably the plant was collected by him). *Convolvulus incanus* is a species of the western United States that rarely becomes adventive east of the Mississippi River. Dr. Hans Hallier annotated the specimen in 1906 as *C. incanus*.

Convolvulus arvensis L. COOK: *H. H. Smith* 5713; *B. Venrick* 28. KNOX: *J. Solomon* 974. MADISON: *J. Solomon* 3881. PEORIA: *V. H. Chase* 3130. RICHLAND: *R. Ridgway* 2621. ST. CLAIR: *H. Eggert s.n.*

CUSCUTA L.

Dr. George Engelmann's first major contribution to North American botany was his work with the genus *Cuscuta*, which resulted in a preliminary treatise in 1842 and a comprehensive monograph in 1859. Engelmann made several collections of *Cuscuta*, beginning in 1835, shortly after his arrival in St. Louis. These provided an important basis for his study, and are critical material for the genus *Cuscuta*. Several of these are from Illinois.

Cuscuta cephalanthi Engelm.

This is one of Engelmann's new species, based on a specimen from St. Louis. The earliest Illinois collection apparently is that of Karl A. Geyer from Cass County, made in September, 1842. Engelmann's first collection of this species from Illinois was made in St. Clair County, in September, 1845. Collections of this species from Illinois are:

CASS: *K. A. Geyer s.n.*, in 1842. COOK: *E. E. Sherff* 1896. HENDERSON: *H. H. Patterson s.n.* MCHENRY: *G. Vasey* 1. MENARD: *E. Hall s.n.* ST. CLAIR: *G. Engelmann s.n.*, in 1845.

Cuscuta compacta JUSS. ST. CLAIR: *H. Eggert s.n.*; *G. Engelmann s.n.*, in August, 1845.

Cuscuta coryli Engelm.

Engelmann named *C. coryli* and its var. *stylosa* in 1842 and, a few years later, he named *C. inflexa*. All three of these taxa appear to represent morphological variations within the same species, *C. coryli*. The types for *C. coryli* and *C. inflexa* are from St. Louis, while the type for var. *stylosa* is from St. Clair County, Illinois, based on an 1838 collection made by Dr. Engelmann. Specimens of *C. coryli* from Illinois in MO are:

CASS: *K. A. Geyer s.n.*, in August, 1842. COOK: *J. M. Greenman* 2782; *E. E. Sherff s.n.* MENARD: *E. Hall* 4. ST. CLAIR: *G. Engelmann s.n.*, in August, 1838, as *C. coryli* var. *stylosa*; *G. Engelmann s.n.*, as *C. inflexa*; *H. Hus s.n.*; *T. Meyer s.n.*

Cuscuta cuspidata Engelm. PEORIA: *N. M. Glatfelter s.n.* ST. CLAIR: *H. Eggert s.n.* UNION: *S. Poellot* 3076a.

Cuscuta glomerata Choisy. COOK: *J. R. Churchill* 673; *J. M. Greenman* 2881; *E. E. Sherff* 1755. DU PAGE: *L. M. Umbach s.n.* IROQUOIS: *W. S. Moffatt* 526. MADISON: *E. Douglass s.n.* PEORIA: *V. H. Chase* 3625. ST. CLAIR: *H. Eggert s.n.* TAZEWELL: *V. H. Chase* 3255.

Cuscuta gronovii Willd.

Two rather distinct varieties of *C. gronovii* occur in the northeastern United States. Typical var. *gronovii* has calyx lobes shorter than the cylindrical corolla.

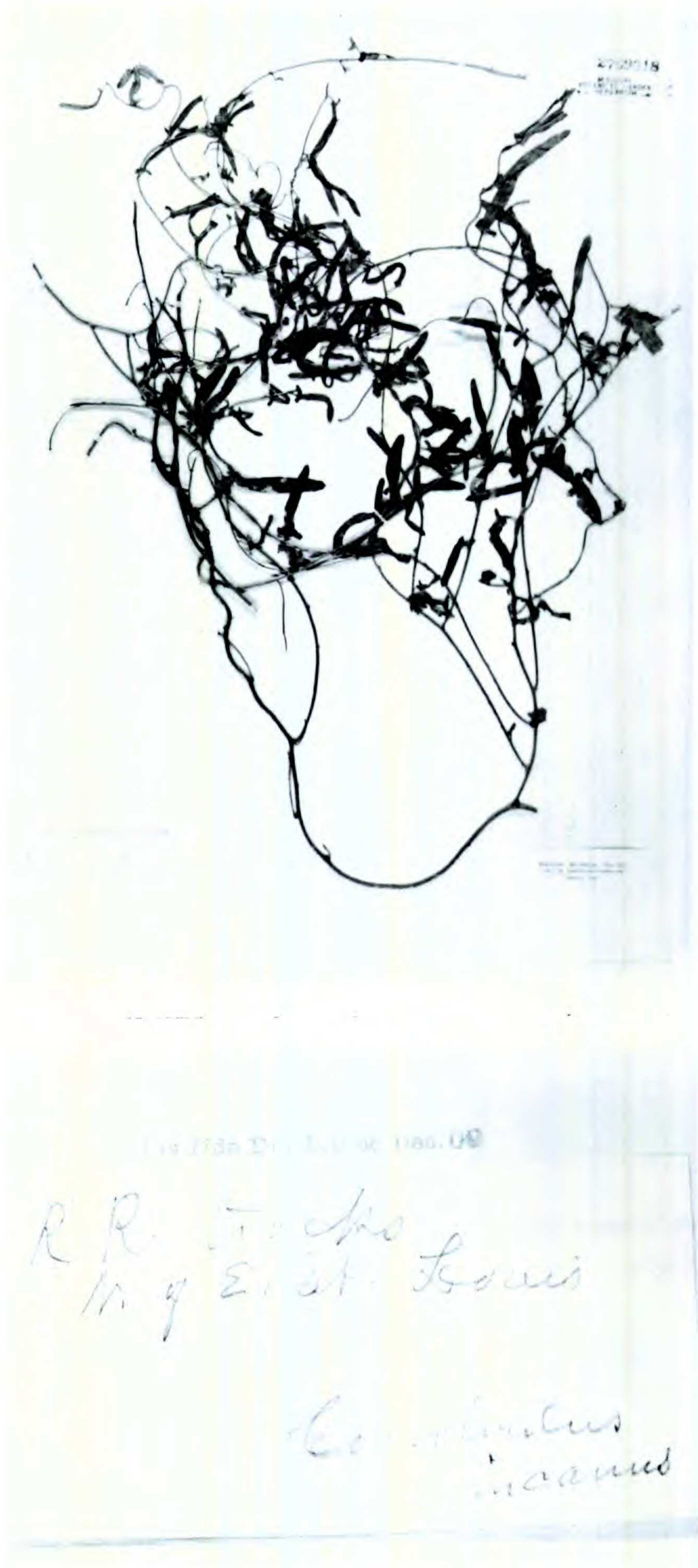


FIG. 3. (above) Herbarium specimen of *Convolvulus incanus* Vahl, from St. Clair County, Illinois. (below) Label from specimen of *C. incanus* from Illinois.

Apparently unaware of the existence of Willdenow's *C. gronovii*, Engelmann (1842) described *C. vulvivaga* for material identical with *C. gronovii* var. *gronovii*. Apparently the earliest collection of *C. gronovii* var. *gronovii* from Illinois is by Karl A. Geyer from Cass County, collected in September, 1842, and determined by Engelmann as *C. vulvivaga*.

Variety *latiflora* Engelm. differs from var. *gronovii* by the calyx lobes about as long as the campanulate corolla. Engelmann (1842) originally described this taxon as a species, calling it *C. saururi*, designating the type from St. Clair County, Illinois (margins of lakes, American Bottoms, opposite St. Louis, Karl A. Geyer, in September, 1841). In 1859, Engelmann changed the status of this taxon to a variety, calling it *C. gronovii* var. *latiflora*. Both var. *gronovii* and var. *latiflora* are recognized in today's Illinois flora. Specimens in MO of these two taxa are:

var. **gronovii**. ALEXANDER: *J. S. Huston 191*. CASS: *K. A. Geyer s.n.* KANE: *E. E. Sherff 1813, 1979*. MACON: *R. G. Mills 28*. MADISON: *R. H. Lerner s.n.* MENARD: *E. Hall 1*. PEORIA: *V. H. Chase 3621*. RICHLAND: *R. Ridgway 2021, 2199*. ST. CLAIR: *M. Craig s.n.*; *H. Eggert s.n.*; *G. Engelmann s.n.*, in September, 1833, in August, 1845; *N. M. Glatfelter s.n.*; *A. S. Hitchcock s.n.*; *J. H. Kellogg s.n.*; *L. H. Pammel s.n.* STARK: *V. H. Chase 169*. WABASH: *J. Schneck s.n.* WASHINGTON: *F. Beckwith 46*. WAYNE: *R. Ridgway 1570*.

var. **latiflora** Engelm. ST. CLAIR: *H. Eggert s.n.*; *G. Engelmann s.n.* in August, 1845, and September, 1845; *K. A. Geyer s.n.* (the type of *C. saururi*).

Cuscuta indecora Choisy. ST. CLAIR: *H. Eggert s.n.*; *J. O. Neill 16522*.

Cuscuta pentagona Engelm.

Engelmann described *C. pentagona* in 1842, choosing a specimen from Virginia as the type. Three years later he named var. *microcalyx* from Illinois material which had smaller calyces. The two taxa are considered today to be equivalent.

CASS: *K. A. Geyer s.n.*, in July, 1842. HANCOCK: *F. Beckwith 45*. ST. CLAIR: *J. M. Greenman 4595*.

Cuscuta polygonorum Engelm.

The type for Engelmann's *C. polygonorum*, named in 1842, is a Lindheimer collection made in August, 1839, in St. Louis and deposited in MO. In 1845, Engelmann described green-fruited specimens otherwise referable to *C. polygonorum* as *C. chlorocarpa*. *Cuscuta polygonorum* and *C. chlorocarpa* have proven to be applicable to the same species.

PEORIA: *V. H. Chase 3322*. ST. CLAIR: *E. Douglass s.n.*; *H. Eggert s.n.*; *G. Engelmann s.n.*, in August, 1845. All three St. Clair County specimens were called *C. chlorocarpa* by Engelmann. TAZEWELL: *V. H. Chase 3313*.

IPOMOEA L.

All five species of Illinois ipomoeas are represented in MO. Although each species is distinct and requires no taxonomic discussion here, a few older specimens are exceptional. Geyer's collection of *I. lacunosa* from St. Clair County in September, 1841, is noteworthy because of its very early collection date, as are specimens by Wislizenus of *I. lacunosa* and *I. purpurea*.

Ipomoea coccinea L. RICHLAND: *R. Ridgway 1429*.

Ipomoea hederacea Jacq. CHAMPAIGN: *G. N. Jones 16264*. ST. CLAIR: *J. P. Bennett 38, 45*; *H. Eggert s.n.*; *J. M. Greenman 4206*; *J. O. Neill 11152*.

Ipomoea lacunosa L. ALEXANDER: *J. S. Huston 316*. HENDERSON: *H. N. Patterson s.n.* JACKSON: *J. McCree 1136, 1264*. MADISON: *F. W. Wislizenus 328*. PEORIA: *F. E. McDonald s.n.* RICHLAND: *R. Ridgway 2279*. ST. CLAIR: *H. Eggert s.n.*; *K. A. Geyer s.n.*, in September, 1841; *N. M. Glatfelter 369*; *J. M. Greenman 4036, 4207*; *J. H. Kellog s.n.*; *G. W. Letterman s.n.*; *J. O. Neill 11025*; *L. H. Pammel s.n.*

Ipomoea pandurata (L.) Meyer. CHAMPAIGN: *G. N. Jones 16439*. COOK: *A. Chase 1390*. FRANKLIN: *T. S. Elias 1476*. KANKAKEE: *J. M. Greenman s.n.* ST. CLAIR: *H. Eggert s.n.*; *A. S. Hitchcock s.n.*; *J. O. Neill 10953*. STARK: *V. H. Chase 711*.

Ipomoea purpurea (L.) Lam. CHAMPAIGN: *G. N. Jones 14423*. JACKSON: *J. McCree 1289*. MCLEAN: *J. S. Solomon 144*. PIATT: *G. N. Jones 40918*. ST. CLAIR: *H. Eggert s.n.*; *F. Wislizenus 326*. VERMILION: *G. N. Jones 15489*.

STYLISMA Raf.

Stylisma is a genus of six species in temperate North America. The one taxon in Illinois has sometimes been placed in *Breweria*, but Myint, who revised the genus in 1966, has given reasons for recognizing *Stylisma*.

Stylisma pickeringii (Torr.) Gray var. **pattersonii** (Fern. & Schub.) Myint.

This variety was discovered in the sand prairies of Henderson County, Illinois, by H. N. Patterson on August 11, 1873. An isotype is in MO.

HENDERSON: Prairies near Oquawka, *H. N. Patterson s.n.*

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